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What is claimed is:

1. A method for treating or preventing stroke in a subject wherein the subject is susceptible to intracranial hemorrhaging, comprising administering a CD39 polypeptide (SEQ ID NO:1) or an active fragment thereof which inhibits adenosine diphosphate-mediated platelet aggregation or inhibits leukocyte accumulation and/or ATP by increasing adenosine diphosphate catabolism to the subject.

2. The method of claim 1, wherein the active fragment is CD39 polypeptide is a mutated or a truncated form of CD39 polypeptide.

3. The method of claim 1, wherein the active fragment is soluble CD39 (SEQ ID NO:2).

4. The method of claim 3, wherein the CD39 polypeptide is a recombinant CD39 polypeptide having IL-2 as its leader sequence.

5. The method of claim 4, wherein the recombinant CD39 polypeptide lacks a transmembrane domain.

6. The method of claim 1, wherein the active fragment comprises from amino acid number 1 to amino acid number 50 of SEQ ID NO.:2.

7. The method of claim 1, wherein the active fragment of the CD39 polypeptide comprises about 20-80 amino acid residues of SEQ ID NO:1 which mimics the active site of CD39.

8. The method of claim 1, wherein the CD39 polypeptide or its fragment is linked to a pharmaceutically

acceptable carrier.

9. The method of claim 1, wherein the administration of the CD39 polypeptide or its active fragment occurs at the onset of stroke in a subject.

10. The method of claim 1, wherein the administration of the CD39 polypeptide or its active fragment is prior to stroke onset in a subject.

11. The method of claim 1, wherein the administration of the CD39 polypeptide or its active fragment occurs after the stroke onset in a subject.

12. The method of claim 1, wherein the CD39 polypeptide or its active fragment is administered in a dosage of 1-20 mg/kg of the subject's body weight.

13. The method of claim 1, wherein the CD39 polypeptide or its active fragment is administered in a dosage of 4-8 mg/kg of the subject's body weight.

14. The method of claim 1, wherein the subject is an animal.

15. The method of claim 16, wherein the subject is a mouse, a rat, a dog, a primate or a human.

16. The method of claim 8, wherein the pharmaceutically acceptable carrier is saline, a liposome, or an anti-stroke agent.

17. A method for determining whether a compound inhibits platelet aggregation or leukocyte accumulation by increasing ADP catabolism so as to treat or prevent thrombotic or ischemic

disorders in a subject, comprising:

a) inducing thrombotic or ischemic disorders in an animal, which animal is an animal model for thrombotic or ischemic disorders;

b) measuring the stroke outcome in said animal,

c) measuring platelet deposition and/or fibrin deposition and/or accumulation of leukocytes in ischemic tissue,

d) comparing the stroke outcome in step (b) and the platelet deposition and/or fibrin deposition with that of the animal model in the absence of the compound so as to identify a compound capable of treating or preventing thrombotic or ischemic disorders in a subject.

18. The method of claim 17, wherein the animal model comprises CD39-deficient mice and wherein the thrombotic or ischemic disorders are induced by administering an agonist to said mice.

19. The method of claim 17, wherein the stroke outcome is determined from the measurements of platelet deposition, bleeding time and infarction volume.

20. The method of claim 17, wherein the compound can be administered orally or by injection.

21. The compound identified by the method of claim 17.

22. The method of claim 17, wherein the administration of the compound is prior to stroke onset in the animal.

23. The method of claim 17, wherein the administration of the compound occurs at the onset of stroke in the animal.

24. The method of claim 17, wherein the administration of the compound occurs after stroke onset in the animal.

25. A pharmaceutical composition comprising the compound of claim 21 and a pharmaceutically acceptable carrier as an agent to treat thrombotic or ischemic disorders in a subject.

26. The pharmaceutical composition of claim 25, wherein the composition comprises a CD39 polypeptide or an active fragment thereof and a pharmaceutically acceptable carrier.

27. A method for treating an ischemic disorder in a subject which comprises administering to the subject a CD39 polypeptide (SEQ ID NO.:1) or an active fragment there of which inhibits ADP or ATP mediated platelet aggregation or leukocyte accumulation so as to treat the ischemic disorder in the subject.

28. The method of claim 27, wherein the leukocyte is a white blood cell, a neutrophil, a monocyte or a platelet.

29. The method of claim 27, wherein the subject is a mammal.

30. The method of claim 27, wherein the mammal is a human.

31. The method of claim 29, wherein the ischemic disorder comprises a peripheral vascular disorder, a pulmonary embolus, a venous thrombosis, a myocardial infarction, a transient ischemic attack, unstable angina, a reversible ischemic neurological deficit, sickle cell anemia or a stroke disorder.

32. The method of claim 27, wherein the subject is undergoing heart surgery, lung surgery, spinal surgery, brain surgery, vascular surgery, abdominal surgery, or organ transplantation surgery.

33. The method of claim 32, wherein the organ transplantation surgery comprises heart, lung, pancreas or liver transplantation surgery.